hierbei, abgesehen von allen anderen, oben erwähnten Momenten der Umstand in Betracht, das die Gröse der angeblichen Parasiten, namentlich bei Berücksichtigung der Marx-Stickerschen Befunde, innerhalb so enorm weiter Grenzen schwanken müste, wie wir es ohne Sporulation, von der nichts zu sehen ist, bei ähnlichen parasitären Gebilden bisher nicht kennen." However, he believes molluscum contagiosum in man and bird to be two different diseases. Herzog[1] says: "Gerade die hiermit erzielten auserordentlich scharfen farbigen Bilder haben nich jedoch zu der Auffassung geführt, das im ganzen Molluscum tumor, soweit sich aus Alkoholpräparaten überhaupt ein Schlus ziehen läst, nicht ein einziges Element vorhanded ist, das auch nur halbwegs mit Sicherheit als ein selkständiges, spezifisch organisiertes regelmäsig in bestimmten Entwicklungsstadien anzutreffendes und zur Klasse der Amöben oder der Cocciden oder der Sporozoen zu rechnendes Gebilde anzusehen ist. Es läst sich vielmehr kontinuierlich der Verlauf der Degeneration der intraacinären Epithelien von den normalen Basalzellen bis zum fertigen Molluscumkörperchen von Stufe zu Stufe verfolgen, ohne das auf einer derselben sich irgend ein Körper findet, der als Gebilde vorgenannter Art, sei es als Spore oder als im Jugendstadium befindliches oder als ausgewachsenes und encystiertes niederes Lebewesen zu deuten wäre." In conclusion, he makes the following statement: "Ebenso ist bei dem Molluscum contagiosum der Uebergang in Karzinom zu verfolgen gewesen, indem von Tommasoli Fälle beschrieben sind, in denen das gleichzeitige Nebeneinanderbestehen von Molluscum contagiosum und Hautkarzinomen bei Personen im mittleren Lebensalter einwandsfrei beobachtet werden konnte."

In the slides examined nothing that looked like carcinoma could be seen, and the patient six months after the operation has had no recurrence.

SURGICAL DIAGNOSIS IN GENERAL PRACTICE.[2]

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Specialism has of late run to such extremes that there is possibility of patients being the worse for this exclusive cultivation of particular fields of medicine. A surgeon, unfamiliar with auscultation and percussion, makes a grave error when he attributes to sepsis a fever which is really a symptom of an intercurrent pneumonia. A physician is equally derelict when he overlooks a strangulated femoral hernia and doses the patient for intestinal colic.

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[1] Virchow's Archives, Band 176, 1904.

[2] The Address on Surgery for 1905 of the Ohio State Medical Association.

Glaucoma and iritis are conditions of the eyeball which must not be treated with antineuralgic remedies, but with recognized surgical therapeutic measures.

It is especially important that the doctor engaged in general practice should have a working knowledge of surgical diagnosis. Cases of all kinds are submitted to his scrutiny, because his clients rely upon him for scientific treatment or for reference to experts in special lines. It is admitted that no one mind can be perfectly familiar with the science and art of all the medical specialties. The literature of each is sufficient to engross for its study nearly all the unassigned hours of a practitioner; and the technical skill demanded in he operative work of some is only acquired and retained by constant opportunity. Nevertheless, the efficient general practitioner of medicine must be familiar with the main diagnostic features of surgical affections. He must know enough to recognize the unsuitability of ordinary medical treatment; so that he may either adopt the therapeutic means required or call to his aid a man versed in them.

Many diseases which are easily managed by the prompt institution of appropriate treatment may, through delay, cause almost irremediable damage to the tissues. This is especially true in pathological conditions of a surgical character. What is more disastrous locally than an unrecognized acute infectious osteomyelitis of the femur? Yet how quickly general symptoms may improve and how satisfactory may be the preservation of the bone, if prompt incision, chiselling and disinfection are adopted. To mistake the disease for acute inflammatory rheumatism and treat it as such, for several weeks, is to imperil the patient's life and ensure irreparable injury to the skeleton. Failure of the physician to recognize an inflammation of the iris has often resulted in a lifelong blindness, which the local use of a few drops of strong atropia solution would have prevented.

It is not asked that the medical practitioner be a skilled operator, prepared to successfully attack a case of intestinal obstruction, but he should be sufficiently informed and alert to know that this pathological possibility prohibits the administration of purgatives by the mouth. He is not expected to localize a tumor of the brain, but he ought to know that the patient's symptoms suggest the possibility of increasing pressure within the brain-case. No intimation is made that he should possess, and be able to use, all complicated instruments of precision. It is, however, demanded that he use his special senses for accurate observation, and his intellect for a reasonable interpretation of the significance of the facts observed.

Instruments of precision are of great value, but too great a dependence on them blunts the senses and makes even the specialist a failure as a diagnostician. It is the man behind the instrument, as well as "the man behind the gun," who accomplishes scientific results. Trained senses and trained reason are essentials in both medicine and war. Acuity of intelligence, of eye, of ear, and of touch is the animating quality of the mechanical instrument of precision. Without it all instruments are as useless as the stethoscope containing the buzzing insect.

Postgraduate teaching has shown me that many practitioners fail to cultivate the faculty of observation and the habit of studying their cases systematically. It is true that a correct surgical diagnosis presupposes the possession of a familiarity with surgical pathology, and this knowledge a study of the normal man. Acquaintance with the healthy human animal and with his surgical abnormalities is, however, of little value to the doctor who never systematically examines his cases. More mistaken diagnoses are due to careless observation than to surgical ignorance. When asked to treat a disease or injury of an extremity, we should call to aid the other arm or leg, as a control, and critically compare the unsound with the sound. Yet my constant cry in the class-room has to be: "Uncover the other side," or "Look at the well leg." It is credible that many irreducible dislocations and deformed fractures would have been early recognized and properly treated, had the doctor required the complaining patient to take off his shirt.

Deficient light in sick-rooms and consulting offices is responsible for many errors in diagnosis, medical as well as surgical. How can changes in color of skin, in local circulation, in lights and shades be properly appreciated in semidarkness? Open the shutters, push up the shades, and thrust aside the tapestries when you examine patients. Learn to look for signs and symptoms. Don't expect them to thrust themselves upon you. Go over the patient systematically. Professor Humphrey, of Cambridge, used to say to his pupils: "Tell me what you see, then what you feel, then ask the history, and finally make your diagnosis." This was good surgical advice, and has often been imitated by me in teaching. Surgical pupils seem to attribute more importance to the history of a case than to the facts to be learned by sight and touch. Surgery has a good deal to do with mechanical changes in the body of the patient. Hence the clinical history has often less value in the establishment of the diagnosis than in medical affections. At any rate, it is good surgery not to be misled by the inaccurate statements of the patient as to causation and symptoms. Examine him with your eyes, ears, and hands, and jot down in your note-book what you see. Do this systematically and accurately. Remember that Sherlock Holmes is the creation of a doctor who learned accuracy of observation from his preceptor. Many years ago I was greatly struck by reading in a London medical journal an instructive lecture on medical observation, written, I now believe, by Conan Doyle's medical teacher.

Thorough and systematic accuracy of observation soon develops mental traits that make it possible to see and mentally record symptoms with great rapidity. As a result, surgeons of experience may make correct diagnosis so quickly as to astonish bystanders. These results may seem to be snap judgments; they are merely instances of trained observation and quick perception of the relation of facts.

It is a bad habit to make no diagnosis, and to lay stress on symptoms only. A wiser course is to come to a provisional conclusion—a tentative diagnosis—and watch with constant acuteness developing symptoms. The doctor who makes no diagnosis in his own mind is more apt to be slovenly in his daily examinations than he who has an opinion which he must confirm or refute. The former method conduces to routine, the latter to progressive enlightenment.

In studying obscure cases I have learned much from consultation, formal and informal, with professional colleagues. Confusion may result, it is true, from having too many consultants or from conducting the consultation in an improper manner. This does not happen if one man is in control and the others are his confrères and counsellors. Unfortunately, some doctors are negligent in the proper conduct of a consultation, and thus create confusion in the minds of the professional attendants, the patient, and the latter's family.

I personally learn more from my juniors than from my elders. The former are more enthusiastic, more keen, more apt to know the new ideas of our science than the men who left college thirty-five or forty years ago. They are, however, a little apt to be unobservant of professional proprieties. Medical colleges nowadays teach science well, but leave the medical neophyte to learn his professional manners by chance.

Systematic examination and record of the temperature, pulse and respiration, and chemical analysis of the urine are important in surgical as well as in medical cases. Many practitioners seem to look upon such observations as an unnecessary loss of time in ordinary surgical conditions. The diagnosis of the original affection or of its complications may, however, be established only by reference to these records. Blood counts, hæmoglobin estimation, and the study of the variations in weight may at times be essential to the discovery of the true pathology.

Many symptoms and signs depend upon physiological or pathological, as well as physical, conditions. Fluctuation, for example, is a sign of fluid in a cavity; the concomitant features of the case must show whether the fluid be serum, pus, blood, or other animal product. Hasty observation may make an erroneous diagnosis of abscess, because fluctuation is one of its common signs. Again, redness is a frequent symptom of inflammation of the skin, but red skin may also be due to dye from a red shirt, or to the use of a red liniment.

A tensely filled cyst may feel as hard as a scirrhous tumor, and not a few breasts have been needlessly sacrificed because of this fact.

We must remember too that objective symptoms—those determined by the doctor's senses—are more reliable than subjective symptoms—those disclosed to us by the patient's statements. Again, affirmative observations are more valuable than negative ones. An *x*-ray picture, showing a fracture, is affirmative evidence of great value; but even it must be corroborated by knowledge that no epiphyseal cartilage exists at the point suspected. The amount of deformity shown by skiagraphs of fractures is, moreover, subject to great error; for the relative position of the shadows is much influenced by the direction of the cone of light and the position of the photographic plate.

When a definite diagnosis has been reached in surgery the attendant must remember to also look for complicating or consecutive conditions. A child may have an evident inguinal hernia, but it may be due to a phimosis, which also demands treatment. Hemorrhoids or anal fistule may be the easily seen condition, but a malignant stricture of the rectum may be the cause. An abscess of the groin or tetanic spasm of the muscles of the jaw may be the sequel of a forgotten wound on the sole of a dirty foot. So also constantly weeping eyes may result from a growth in the nose blocking up the outlet of the tear duct. Search must always be made for the primary cause of symptoms, and for complicating conditions.

The diagnosis of the constitutional resistance of patients is most important. Much time is often necessary to reach a correct conclusion in this regard. Especially is this true when a severe operation is contemplated. Hereditary influences, mental control, digestive competency, excretory sufficiency, and absence of hemorrhagic tendency must all be considered. Unfortunately, the power to resist surgical attack and its possible bacterial infections is difficult to estimate. Even with the many methods of physiological investigation now available our estimation of a man's power of resistance may be faulty, and surgical tragedies result in consequence.

Experience teaches us that pain is not infrequently a deceptive symptom. Patients with little control of their emotions complain most grievously of physical suffering, which is evidently not great. On the other hand, some men will make no outward sign, though suffering agony that brings cold sweat to their foreheads and the pinched expression of face that means approaching death. Pain reflected along nerves is liable to call the doctor's attention away from the true seat of disease. As instances may be mentioned pain in the scrotum, due to inflammation around the kidney; pain in the abdomen, caused by tuberculous destruction of the dorsal vertebræ; pain at the knee, resulting from tuberculous hip-joint disease.

It is well also to recollect that a deformity may have existed for years unobserved by the patient, and be attributed by him to a recent injury. Not infrequently is a man found to be quite blind in one eye, without the defect having been noticed by him until he accidentally closed the other. Paralysis of a limb must not be assumed simply because a patient declares that he cannot move it. He may mean that he is afraid to move it because of the pain. Even should the doctor find one lesion in a patient, the subject of violence, he should not desist in his examination until he has thoroughly inspected the man for other injuries. This caution is of special importance if the patient be unconscious from brain injury or acute alcoholism.

Do not think that blackness of the skin from ecchymosis or large blebs filled with bloody serum are necessarily indications of mortification. The laity are often frightened by these appearances, and especially so if the ecchymosis first appears some days after the receipt of injury. The latter phenomenon often means that a fracture or dislocation has occurred, and that the effused blood from the deep vessels has only reached the surface when sufficient time has elapsed for it to escape through the openings in the deep fascia. Gravity often causes the superficial black and blue appearance to show itself a long distance from the torn vessels. The doctor may be thus misled as to the seat of injury.

Sleeplessness at night, arising in patients with operative or accidental lesions, should suggest traumatic delirium tremens. Such wakefulness may, it is true, be the result of successive doses of strychnine, given for its tonic effect. I have known inexperienced practitioners to give sleepless patients bromides and other hypnotics when the condition really required merely the cessation of repeated doses of strychnine, which were causing mild strychnine poisoning. Delirium tremens occurs, as a complication of surgical lesions, in individuals who have been constant users of alcohol, even in amounts too small to cause actual intoxication. They may have become chronic alcoholics from long use of patent medicines. Inability to sleep after operation or accident may, therefore, arise from mild alcoholic delirium in patients, whose social and personal standing would seem to preclude the possibility. Doctors must bear this fact in mind and treat the wakefulness with moderate alcoholic stimulus, good food and appropriate hypnotics, instead of with massive doses of narcotics. Marked cases of delirium tremens are not difficult to recognize. Reference is now made to those instances which are liable to be overlooked because of the respectability of the patient or the mildness of the symptoms. Alcoholic delirium, like syphilis, is found in the household of the respectable as well as in the hovel of the disreputable. While the medical attendant need not offend by an official announcement of his diagnosis, it is the part of wisdom to remember that a very large percentage of human disease results from unsuspected contamination with syphilis, and unsuspected tissue deterioration from the use of alcohol, or from other dietetic immoralities. I believe that some instances of restlessness and nervousness, seen in surgical conditions, are due to abstinence from a customary use of tobacco and coffee. Such abstinence is perhaps enforced unnecessarily by the doctor, who fails to recognize that his patient has become habituated to the large use of these agents, and that his nervous system resents their sudden withdrawal, especially when under the strain of a surgical convalescence.

The wide distribution of syphilis and tuberculosis should always occur to our minds when patients apply for diagnosis and treatment. There is a marked similarity, too, in the lesions which they produce. How similar in clinical appearances, for example, are syphilitic glossitis and tuberculous glossitis, syphilitic osteomyelitis and tuberculous osteomyelitis! We must not forget that many pelvic affections are of tuberculous origin. Tuberculous infection of the female pelvic organs, by the route of the Fallopian tubes, is probably second only to gonorrhœal infection in producing pathological conditions requiring surgical intervention. In truth, if syphilis, tuberculosis, gonorrhœa and alcoholic poisoning were excluded from the ills of humanity, there would be comparatively little need for surgical diagnosis, except in accidents.

Before the discovery of the tubercle bacillus and the recognition of its etiological relation to disease, tuberculosis was thought by many to be often a late manifestation of acquired or inherited syphilis. The chronic inflammations, with delayed resolution, and the tendency to caseation of inflammatory products common to the two affections were evidences, it was thought, of a pathological connection. ("The Relation of Syphilis to Scrofula," by John B. Roberts, *Proceedings of the Philadelphia County Medical Society*, 1881–82, vol. iv. p. 65.)

Another important surgical condition which may mislead the general practitioner is subacute or chronic septicæmia with occasional chills. As the focus of bacterial infection may be undisclosed by superficial examination, the irregular fever with slight chilliness may be attributed to malaria. If the patient live in a malarial district or give a history of previous intermittent fever, the diagnosis of ague seems not unwarranted. Pus in the pelvis, chest, gall-bladder, urinary bladder or kidney, or in sinuses leading to diseased bone may be the cause of the symptoms and only be discovered by an alert physician. The irregularity of the febrile movement and chills, a furred or a clean, glazed tongue, the capricious appetite, the loss of flesh, the hectic flush on the cheek, the inefficiency of full doses of quinine, the finding of septic organisms in the blood, and the evidences of possible suppuration in some region of the body are the diagnostic points to distinguish this condition from malaria. In the latter disease microscopic examination of the blood may disclose the malarial organism.

The general practitioner called to a patient with stiffness at the back of the neck should think of tetanus, as well as of cerebrospinal fever and strychnine poisoning. The wound by which the tetanus bacillus effected entrance may have been insignificant, or have healed, and been forgotten before the muscular rigidity and fever attracted notice. Such cases were formerly called idiopathic or rheumatic tetanus, but nowadays idiopathic tetanus is an indefensible diagnosis. The portal of entrance for the organism must exist, though we may not be able to demonstrate it.

The inexperienced sometimes mistake the redness and swelling of local suppurative inflammation for erysipelas, and become needlessly alarmed. This error is perhaps most frequent in cases of moderate pyogenic infection or abscess of the cellular structures about the eyelids and scalp. Antiseptic cleansing of the wound or evacuation of the pus will usually settle the diagnosis in the course of a few hours. It is true that both conditions are due to bacterial infection; but the streptococcus infection, causing what is inaccurately perhaps called erysipelas, is a much more serious affection than the local non-spreading inflammation due to the less active pyogenic organisms.

Acute peritonitis resulting from gastric ulcer, appendicitis, cholecystitis or typhoid ulceration of bowel should always be borne in mind by the physician. This disastrous condition, when promptly treated by operation, is curable in a fair proportion of cases, but it is necessary that the medical man be prompt in summoning surgical assistance. When the diseases mentioned are under treatment, it is often the part of wisdom to have a surgeon see the patient so afflicted before any complication arises. Then he is familiar with the patient's condition, and is less likely to delay operative procedures if the catastrophe of perforation takes place. It is a sort of life insurance policy to have both the physician and the surgeon familiar with the clinical details of the case before an emergency comes. This is exemplified by the practice in some hospitals, where a man has a better chance of recovery from such conditions than in the home of even the very wealthy.

A corollary to this proposition is the statement that surgical cases have a better chance of being scientifically treated if the surgeon has a physician advise him occasionally. It is said of a private hospital, run by a well-known surgeon, that the patients have little chance of efficient medical treatment if medical complications occur during surgical convalescence. Of the truth of the statement I know nothing, but I am sure of its possibility under the present specialization of professional work. Surgeons are liable to overlook ether pneumonia, hypostatic and septic pneumonias, gonorrhœal and rheumatic pericarditis, and toxic nephritis arising incidentally in operative cases.

Examination of wounds is an important part of the surgeon's duty, and should be undertaken by the general practitioner in a surgical manner, when it falls to his lot to have the responsibility of diagnosis. Open wounds should be explored with aseptic hands, which are easily obtained by the use of the nail cleaner, hot water and soap applied vigorously with the scrubbing brush, and immersion for a few minutes in a solution of corrosive sublimate or other chemical antiseptic. Probes, scissors, forceps and other instruments should be cleansed with soapsuds, and then boiled for a few minutes in a pan of water. The patient's wound and the surrounding skin should be sterilized in the same manner as the examiner's hands, even if general anæsthesia is required to permit it.

Open wounds should be inspected for foreign bodies, divided tendons, severed nerves and opened joints, as well as for cut blood-vessels. Too often the arrest of hemorrhage is the only subject to which the examiner gives attention. He should remember that cut tendons and nerves must be united by stitches to restore muscular and nervous function; and that, therefore, the diagnosis of the extent of an injury includes recognition of damage to the muscular apparatus and the nervous supply. In subcutaneous wounds injury to nerves, muscles and vessels may be recognized by sensory or motor palsy; absence of resistance to opposing muscles; pallor, coldness, and want of arterial pulsation in distal regions, and rapidly formed swellings.

The constitutional effects of surgical shock and of hemorrhage must be recognized, and these two conditions must be discriminated from each other. Their symptoms are similar in some respects and are quite often combined. Surgical shock usually occurs immediately; makes the patient motionless, cold, apathetic and pallid; gives him a weak, frequent pulse and shallow but quiet respiration, and diminishes the proportionate amount of fluid in the blood. Hemorrhage, unless it be quickly enormous in amount, causes a more gradual loss of strength; an increasing pallor and waxy appearance of the skin and mucous membranes; a weak, feeble pulse; sighing respiration, dyspnœa, thirst, restlessness, and a rapid diminution in the number of red corpuscles per cubic millimetre. To determine which of these constitutional states is the more urgent in a given patient, where their effects are combined, is often a difficult problem.

The value of experience in watching the healing of wounds is strikingly shown by knowing when to explore for infected fluid in a wound which has healed superficially. It quite often happens that the skin unites without irritation, though a few drops of infected serum or blood clot are enclosed in the bottom of the wound. Unless the edges of the united skin are separated with a stiff probe or other instrument, to give vent to this septic fluid, an abscess will form.

As is well known, there is often an aseptic wound fever for a day or two after the suturing of a deep or large wound, due to the absorption of nuclein and other products of disintegrating tissues and blood clot. This may cause the temperature of the patient to rise a degree or two above normal. If all is well, this fever, which is slight, soon subsides; if not, it is succeeded by the febrile reaction of infection. The latter continues, gives a higher temperature record, and in time is succeeded by local suppuration or symptoms of general septicæmia. To prevent this, the wound should be opened and the septic fluid evacuated. As the skin incision is doing well and uniting by first intention, the doctor may dislike to disturb the wound by opening it for drainage. In cases of uncertainty, however, it is better to remove one or two sutures and dig down to the bottom of the wound with a stiff probe or the handle of a scalpel. If no septic fluid is imprisoned in the bottom of the wound, this aseptic opening will delay union very little; whereas if there be some, its retention will surely cause trouble and a prolongation of the patient's convalescence. It is better, therefore, in cases of doubtful diagnosis, to open thus a channel for drainage.

My effort in addressing this Association has been to bring to the consideration of its members the desirability of cultivating at least a working familarity with other specialties than those in which we individually work. As the surgeon should know something of medicine, so should the physician know something of surgery. It is easy, too, in these days of medical societies, dispensaries, hospitals and postgraduate courses to obtain this additional knowledge and experience. Even if it were not easy, it is our duty because of its necessity for the welfare of our patients. A microscope, a head mirror, a lens for oblique illumination of the eye, a stethoscope, an ophthalmoscope and other instruments for investigation of disease are now essential in professional work. If these adjuncts are necessary, the ability to use them is demanded of all of us. Hence we must educate ourselves for the proper fulfilment of our task. Luckily, the County Medical Society and the State Medical Association have efficiently come to our aid. At the meetings of these organizations we may see our own deficiencies and profit by the opportunity given us to learn. They extend to us, moreover, a chance to combine with our colleagues and purchase the most expensive and complicated instruments of research and precision, and establish local laboratories for x-ray work, blood examinations, and clinical and histological investigations. By this co-operative method each of us may profit by the special knowledge and trained senses of all our professional colleagues.